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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,326	06/21/2006	Joaquim Henrique Teles	131560004US1	9081
23416 7590 03/26/2008 CONNOLLY BOVE LODGE & HUTZ, LLP P O BOX 2207 WILMINGTON, DE 19899				
EXAMINER				
WITHERSPOON, SIKARL A				
ART UNIT		PAPER NUMBER		
1621				
MAIL DATE		DELIVERY MODE		
03/26/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/573,326

**Applicant(s)**

TELES ET AL.

**Examiner**

Sikarl A. Witherspoon

**Art Unit**

1621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 September 2006.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-20 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/SG/US)  
Paper No(s)/Mail Date 6/21/06  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buckley (US 2,636,898) in view of Uriarte et al (Studies in Surface Science and Catalysis, 2000) and Fahey (J. Org. Chem, 1973).

The claims are drawn to a process for preparing a ketone by oxidizing cyclododecatriene with dinitrogen monoxide to obtain cyclododecadienone, and subsequently hydrogenating cyclododecadienone to produce cyclododecananone. Further limitations include the dinitrogen monoxide coming from the offgas of an adipic acid plant and/or a dodecanoic acid plant.

Buckley teaches the oxidation of unsaturated compounds by nitrous oxide (dinitrogen monoxide) to the corresponding ketone (or aldehyde). The oxidation is preferably carried out at a temperature from 200 to 350° C at an elevated pressure, exceeding 20 ats. The reference teaches that almost any unsaturated organic compound may be used for the oxidation reaction, with reference given to hexatriene, a linear compound having three sites of unsaturated and cyclooctatetraene, a cyclic compound having four sites of unsaturation (col. 1, line 1 to col. 3, line 18).

The reference does not expressly teach cyclododecatriene as a reactant, does not teach the source of the dinitrogen monoxide, and does not teach hydrogenation of the oxidation product to the saturated ketone.

Regarding the first difference, while Buckley does not specifically teach cyclododecatriene as a reactant, the reference expressly teach that almost any unsaturated compound may be employed, and teaches a compound having three sites of unsaturation and four sites of unsaturation.

To that end, the examiner takes the position that a person having ordinary skill in the art looking to oxidize a macrocyclic compound having multiple sites of unsaturation, would have found it obvious to employ the oxidation process and reaction conditions taught by Buckley for oxidizing a compound such as cyclododecatriene if said compound was the desired reactant.

Buckley does not teach the source of dinitrogen monoxide; however, Uriarte teaches that waste nitrous oxide from an adipic acid process can be used as an oxidizing agent. Therefore, it would have been obvious to a person having ordinary skill in the art the find value in the nitrous oxide produced from an adipic acid process by using said nitrous oxide as an oxidizing agent for oxidizing unsaturated organic compounds.

Finally, while Buckley does not teach hydrogenation of the compounds produced by his oxidation process, Fahey teaches the selective hydrogenation of cyclododecatriene to cyclododecene catalyzed by ruthenium complexes. Therefore, a person seeking to reduce a compound such as cyclododecadienone produced from the

oxidation of cyclododecatriene would have found it obvious to hydrogenate the cyclododecadienone using the selective hydrogenation catalyst taught by Fahey. Such a person would have been motivated to reduce the cyclododecadienone by the intrinsic value of the cyclododecanone produced, which may be used an intermediate for producing the corresponding lactams, carboxylic acids, and polyamides derived therefrom.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikarl A. Witherspoon whose telephone number is 571-272-0649. The examiner can normally be reached on M-F 8:30-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler can be reached on 571-272-0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 1621

/Sikarl A. Witherspoon/

Primary Examiner, Art Unit 1621